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24 JUL 1975

Soviet Fast Breeder Reactor at Shevchenko Experiences
Another Steam Generator Failure

In February, one of the recently repaired steam generators on the BN-350 liquid-metal fast breeder reactor (LMFBR) located at Shevchenko experienced a massive failure. After only 7 days of operation about 700 liters of water entered the sodium side of the steam generator. Temperatures reached 800-900°C because of the sodium-water reaction. High temperature caustic corrosion damaged 120 tubes. The cause of this steam generator failure was believed to be defective tube material since the end caps and welds had undergone extensive nondestructive testing.

Comment:

Lack of adequate quality control has plagued Soviet development of a reliable steam generator for LMFBRs. This is the fourth steam generator failure for the BN-350, and it could delay the full-power operation of the reactor by as much as a year. The causes of the first three failures were attributed to poor welding and inadequate inspection procedures. Since the fourth failure has been attributed to defective tube material, it is not known whether the Soviets will continue with their program to retube the steam generators with the existing supply of field tubes or whether new tubes will be ordered.

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Remarks:

This is the brief item
I spoke to you about today.
Thought George
Murphy on the JCAE Staff
would probably be interested
in seeing it —

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